1 OF 1

APR 7 1993

Alan F. Weston, Ph.D.
Manager, Analytical Services
Occidental Chemical Corporation
360 Rainbow Boulevard, South
P.O. Box 728
Niagara Falls, New York 14302-0728

Re: Occidental Chemical Corporation-Buffalo Avenue Plant
EPA I.D. No.: NYD000824482
Dioxin Investigation Program

Dear Dr. Weston:

The New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (EPA) have reviewed OxyChem's March 12, 1993 letter regarding the Dioxin Investigation Program.

In that letter, OxyChem provided the analytical results of the three additional sewer bedding samples (BED 11A, BED 13, and BED 14) that were collected along the Buffalo Avenue sanitary sewer system. The samples were collected to further define the dioxin presence in that area.

The analytical results indicate that 2,3,7,8-TCDD was not detected in the three bedding samples using a detection limit of 0.5 micrograms per kilogram (µg/kg). As a result of this round of sampling and analysis, the extent of 2,3,7,8-TCDD presence has been satisfactorily defined and the agencies consider the Dioxin Investigation complete.

As you specify in the letter, the need for additional corrective measures for dioxin contamination at the Buffalo Avenue Plant will be evaluated in the component of the Corrective Measures Study (CMS) that covers overburden soils.

If you have any questions regarding this letter or would like to discuss this matter further, please contact William E. Wertz, Ph.D., of the NYSDEC, at (518) 457-9255 or Alan Straus, of the EPA, at (212) 264-5131.

Sincerely yours,

Andrew Bellina, P.E.
Chief, Hazardous Waste Facilities Branch
Air and Waste Management Division
United States Environmental Protection Agency

Paul R. Counterman, P.E.
Director, Bureau of Western Regions
  Hazardous Waste Programs
Division of Hazardous Substances Regulation
New York State Department of
  Environmental Conservation

bcc: W. Wertz, NYSDEC
E. Belmore, NYSDEC
P. Buechi, NYSDEC Region 9
K. Maiurano, NYSDEC
A. Bronson, NYSDOL

A. Bellina, 2AWM-HWF
J. Reidy, 2AWM-HWF
A. Straus, 2AWM-HWF
RCRA FILE, 20PM-ISS

Alan Strang

DEC 9 1992

Alan F. Weston, Ph.D.
Manager, Analytical Services
Special Environmental Programs
Occidental Chemical Corporation
360 Rainbow Boulevard, South
P.O. Box 728
Niagara Falls, New York 14302-0728

Re: Occidental Chemical Corporation-Buffalo Avenue Plant
EPA I.D. No.: NYD000824482
Dioxin Investigation Program

Dear Dr. Weston:

The New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (EPA) have reviewed OxyChem's letter of September 24, 1992. In that letter, OxyChem responded to NYSDEC/EPA's comments regarding further investigation of the sewer bedding along Buffalo Avenue.

The proposed locations for the BED-13 and BED-14 sanitary sewer bedding samples are acceptable. In addition, as discussed during a December 4, 1992 telephone conversation between OxyChem and NYSDEC, OxyChem will collect and analyze a sample of the sewer bedding in the vicinity of BED 11. The purpose of the sample is to confirm the dioxin concentration in that vicinity.

The results of the sampling will be evaluated by NYSDEC/EPA to determine the necessity for any additional sampling activities.

Please notify the NYSDEC on-site monitor at least five (5) days prior to sampling.

If you have any questions regarding this letter or would like to discuss this matter further, please contact William E. Wertz, Ph.D., of the NYSDEC, at (518) 457-9255, or Alan Straus, of the EPA, at (212) 264-5131.

Sincerely yours,

Andrew Bellina, P.E.
Chief, Hazardous Waste Facilities Branch
Air and Waste Management Division
United States Environmental Protection Agency

Paul R. Counterman, P.E.
Director, Bureau of Hazardous Waste Facility Management
Division of Hazardous Substances Regulation
New York State Department of Environmental Conservation

cc: W. Wertz, NYSDEC
E. Belmore, NYSDEC
P. Buechi, NYSDEC, Region 9
K. Maiurano, NYSDEC
A. Bronson, NYSDOL

bcc: A. Bellina, 2AWM-HWF
J. Reidy, 2AWM-HWF
A. Straus, 2AWM-HWF
RCRA FILE, 2OPM-ISS

Alan S. Weston

A. Bellina

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233

Thomas C. Jorling
Commissioner

September 16, 1992

Alan F. Weston, Ph.D.
Occidental Chemical Corporation
360 Rainbow Blvd., South
P.O. Box 728
Niagara Falls, NY 14302-0728

Dear Dr. Weston:

Re: Dioxin Investigation Program 1992 Addendum

The New York State Department of Environmental Conservation (NYSDEC), and the United States Environmental Protection Agency (USEPA) have reviewed OxyChem's letter of May 12, 1992 regarding the Dioxin Investigation Program Utility Bedding Investigation and the "Dioxin Investigation Program, 1992 Addendum" which was submitted August 11, 1992. The Agencies have the following comments on the Dioxin Investigation Program.

Due to the elevated levels of dioxin in Bed 12 (14 ppb) further investigation of the Buffalo Avenue Sewer Bedding is necessary. At a minimum, OxyChem should install a borehole to the west of BED-11, one to the east of BED-12, and one in the Sewer Bedding on the south side of Buffalo Avenue.

Based upon the available information, the Agencies concur with OxyChem's position that additional interim corrective measures beyond those already performed are not needed in the Railroad Area, Building D-7 Area, or the X-Area.

Should excavation in those areas or along Buffalo Avenue be necessary (for construction activities, access to utilities, etc.), OxyChem must take appropriate actions to assure the protection of workers and to minimize the dispersion of contaminated soils.

Please respond to these comments within 30 days.

Should you have any questions regarding this issue, please call William E. Wertz, Ph.D., of the NYSDEC at (518) 457-9255 or Alan Straus of the USEPA at (212) 264-5131.

Sincerely,

Paul R. Counterman

Paul R. Counterman, P.E.
Director
Bureau of Haz. Waste Facility Mgmt.
Division of Haz. Substances Regulation

Paul R. Counterman
for

Andrew Bellina, P.E.
Chief
Hazardous Waste Facilities Branch
U.S.E.P.A. - Region II

cc: E. Belmore
P. Buechi - Region 9
F. Shattuck - Reg. 9
A. Straus - USEPA Reg. II
A. Bronson - NYSDOL
A. Wakeman - NYSDOH
N. Parratt

bcc: K. Maiurano
P. Skinner
W. Wertz
S. Radon

Alan A. Bellina

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233

December 18, 1991

Thomas C. Jorling
Commissioner

OP

Mr. Alan F. Weston, Ph.D.
Occidental Chemical Corporation
360 Rainbow Blvd., South
P.O. Box 728
Niagara Falls, NY 14302-0728

Dear Mr. Weston:

Re: Dioxin Investigation Summary Report

The New York State Department of Environmental Conservation (NYSDEC), and the United States Environmental Protection Agency (USEPA) have reviewed OxyChem's October 21, 1991 responses to the Agencies' comments on the Dioxin Investigation Summary Report. OxyChem's responses are acceptable. Final approval of the Dioxin Investigation Report will be contingent on the results of the proposed sampling plan.

Should you have any questions regarding these issues, please call William E. Wertz, Ph.D., of the NYSDEC at (518) 457-9255 or Alan Straus of the USEPA at (212) 264-5131.

Sincerely,

Edward C. Miles for
Paul R. Counterman, P.E.
Director
Bureau of Haz. Waste Facility Mgmt.
Division of Haz. Substances Regulation

Edward C. Miles for
Andrew Bellina
Chief
Hazardous Waste Facilities Branch
U.S.E.P.A. - Region II

cc: E. Belmore
P. Buechi - Region 9
F. Shattuck - Reg. 9
A. Straus - USEPA Reg. II
A. Bronson - NYSDOL
A. Wakeman - NYSDOH
N. Parratt

bcc: K. Maiurano
P. Skinner
W. Wertz

Alan Stanic

A. Bellina

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233

Thomas C. Jorling
Commissioner

September 30, 1991

Mr. Alan F. Weston, Ph.D.
Occidental Chemical Corporation
360 Rainbow Blvd., South
P.O. Box 728
Niagara Falls, NY 14302-0728

Dear Mr. Weston:

Re: Revised Dioxin Investigation
Program Summary Report

The New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (USEPA) have reviewed OCC's revised Dioxin Investigation Program Summary Report which was submitted in April 1991. In general OCC has addressed the agencies' March 1991 comments on the Dioxin Investigation Program Summary Report; however, several items require additional clarification.

1. Page 45, Section 5.2.8: More detailed descriptions of the interim corrective measures are needed. A map which includes plan and cross-sectional views of the areas at which paving has been used as an interim measure would be acceptable.

2. Page 49, Section 5.3.1: Additional sewer sediment sampling downstream of manhole MH170A will not be required at this time. When conducting the corrective measures study, OCC must estimate the dioxin loadings into the off-site sewers, and must evaluate the need for corrective measures for that system.

The agencies concur with OCC's proposal for additional samples west of Building D-21, at sample location 302 and 304, and at BED-7. OCC should attempt to collect the samples within the next 60 days.

Should you have any questions regarding these issues, please call William E. Wertz, Ph.D., of the NYSDEC at (518) 457-9255 or Alan Straus of the USEPA at (212) 264-5131.

Sincerely,

Edward C. Miller for

Paul R. Counterman, P.E.
Director
Bureau of Haz. Waste Facility Mgmt.
Division of Haz. Substances
Regulation

Edward C. Miller for

Andrew Bellina
Chief
Hazardous Waste Facilities Branch
U.S.E.P.A. - Region II

cc: E. Belmore
P. Buechi - Region 9
A. Straus - USEPA Reg. II
A. Bronson - NYSDOL
A. Wakeman - NYSDOH
N. Parratt

bcc: K. Maiurano
P. Skinner
W. Wertz
S. Radon

Alan Strus EPE

MAR 27 REC'D

A. Bellina

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233

Thomas C. Jorling
Commissioner

March 23, 1991

JR

Mr. Alan F. Weston, Ph.D.
Occidental Chemical Corporation
360 Rainbow Blvd., South
P.O. Box 728
Niagara Falls, NY 14302-0728

Dear Mr. Weston:

The NYSDEC in consultation with the NYSDOL, and the USEPA have reviewed the "Dioxin Investigation Program Summary Report" which was submitted by OCC in January 1991. The agencies have the following comments on the report:

Dioxin Investigation Program Report

1. **Page 15, Sample Analysis Modification:** Table 2-3 lists samples which were "homogenized incorrectly" by the laboratory. OCC should provide a detailed description of how those samples were homogenized. OCC should also provide justification for the conclusion that the procedure "was adequate to ensure that the data are representative."

   OCC should also clarify the discrepancy between the list of samples contained in Table 2-3 and the list which was provided in the May 7, 1990 correspondence from A. Weston to A. Bellina that discussed the homogenization procedure.

2. **Page 15, EPA/State Splits:**

   There are several differences between the sample depths listed in Table 2.4 and those recorded by the EPA contractor who collected split samples from OCC. The differences are as follows:

	OCC (Table 2.4)	EPA
D 7-1	2.5 - 4.5	1.5 - 4.5
Bed-2	6.9 - 7.6	4.5 - 6.5
315	0.0 - 0.5	0.0 - 1.5
321	0.0 - 0.5	0.5 - 1.5
318	1.2 - 1.7	0.5 - 1.5
FG-4	0.75 - 3.75	1.5 - 4.5

The EPA contractor is verifying its data; OCC should do the same.

3. **Page 19, Analytical Results:** OCC should provide Figures of the U and C/D areas which illustrate all current and historical sampling locations and analytical results.

4. **Page 21, Railroad Area:** Additional sampling and analysis to further determine the areal and vertical extent of dioxin in the Railroad Area may be necessary as part of the Corrective Measures Study (CMS). OCC must provide justification for not collecting additional samples from depths below 18" at locations 302, 304, and the vicinity of BED-2 to further define the extent of contamination.

5. **Figure 4.1 and Figure 4.2:** OCC should explain the reason for the groundwater sink at OW-353. OCC should also include the location of the Energy Boulevard Drain Tile System on the figures.

6. **Page 31, top of page:** The ratios of dioxin concentrations with 2,4,5-TCP is based on only three data sets. This is not sufficient to identify a trend. OCC should qualify their statement to indicate that this "pattern" is based on limited data, and consequently, no definite conclusions can be made without further sampling and analysis.

   Typographic Error: Change "Total Benzoic Acid" to "Total Chlorobenzoic Acid."

7. **Page 32, first paragraph:** See previous comment: No assumption for dioxin concentrations can be made based on limited data available. OCC should either eliminate the statement or qualify it as based on very limited data.

   Given the wide range of percentages of "2,3,7,8-TCDD/Dioxin Total Equivalents" which are described in Tables 4.5 through

4.8, OCC must develop a mechanism to establish "expected" Dioxin Total Equivalent data from 2,3,7,8-TCDD data when performing the CMS. Confirmatory sampling may be necessary to establish the Dioxin total equivalents concentrations at some locations.

8. **Page 32, Iroquois Street Sewer:** OCC must provide an evaluation of the need for sewer sediment sampling beyond MH170A, Iroquois Street Sewer, where dioxin was identified at a concentration of 15 ppb.

9. **Page 33, X-Area:** The first sentence of the last paragraph is misleading. Dioxin has also been identified in both the upper and lower sampling depths in Sub-Area IV.

   OCC should provide a schedule for submittal of the analytical results from locations 258, 259, 260, 261, and 262.

10. **Page 42, D-Area Sewers:** Section 5.25 should be expanded to provide a historical perspective regarding sewer sediment sampling downgradient of MH-320, MH-301 and MH-307, and the reasoning for not proposing additional samples downgradient of those locations.

11. **Page 45, Section 5.2.8:** OCC identified areas where interim corrective measures have previously been implemented. OCC should provide a complete summary description of those measures.

12. **Page 46, Building D-7 Area:** The next to last paragraph should be changed to read, "The investigation of the areal and vertical migration of Dioxin in the D-7 Area soils is complete and no further investigative activities <u>under the RCRA Facility Investigation</u> are required in this area."

13. **Page 47, D-Area Sewers, second paragraph:** Is it possible that dioxin contaminated sediments can be transported within the sewer? Can DNAPL which contains dioxin enter the sewer? Potential exposure points downstream of the D-Area should be addressed.

    Typographic error: Change "exposed" to "exposure".

14. **Page 48, last paragraph:** See comment #13.

15. **Page 49, 47th Street Sewer:** What is the basis for the implicit assumption that the sediment samples are representative of historical conditions?

16. **Page 50, second and third paragraph:** If dioxin was contained in fill material brought to the X-Area, OCC should attempt to determine the source of the fill.

17. **Page 50, Section 5.4.1.1, X-Area Interim Corrective Measures:** The agencies agree with OCC that interim corrective measures are appropriate for the X-Area. The agencies are currently reviewing the "X-Area, Corrective Measures Study" which was submitted by OCC on March 7, 1991. As you are aware, approval of a cap as an interim measure will not preclude the agencies from requiring OCC to evaluate excavation of the dioxin contaminated soils as part of the "final remedy" for the X-Area.

18. **Page 53, D-Area:** The statement at the top of page 53 that "No PCDD were detected in the groundwater" is incorrect. Wells 355 and 357 had PCDD concentrations of 5.9 ppt and 13 ppt, respectively. Those concentrations exceed the 6NYCRR Part 703.5 standard of .035 ppt. Therefore, further analysis of groundwater samples is warranted.

    Page 54, Section 5.5.3, Sanitary Sewer Sediment: OCC should expand this section by describing the potential sources of PCDD and PCDF other than the D-Area.

19. **Page 56, D-Area:** The agencies agree that an additional borehole (C-3) should be installed west of former building D-21. In addition, OCC should discuss whether the historical operations associated with building D-21 may be related to the dioxin contamination which has been observed in its vicinity.

QA/QC Report:

The agencies have also reviewed the "Dioxin Investigation Program - Quality Assurance Report" which was submitted by OCC on March 21, 1991. We concur with OCC's proposal to collect and analyze additional soil and water samples to replace those which were deemed suspect as a result of the QA/QC review.

Please respond to these comments by April 15, 1991.

Should you have any questions regarding these issues, please call William E. Wertz, Ph.D., of the NYSDEC at (518) 457-9255 or Alan Straus of the USEPA at (212) 264-5131.

Sincerely,

Roger D. Murphy
for Paul R. Counterman, P.E.
Director
Bureau of Haz. Waste Facility Management
Division of Haz. Substances Regulation

Roger D. Murphy
for Andrew Bellina
Chief, Hazardous Waste Facilities Branch
U.S.E.P.A. - Region II

cc: E. Belmore
P. Buechi - Region 9
A. Straus - USEPA Reg. II
R. Osar - NYSDOL
A. Wakeman - NYSDOH
N. Parratt

bcc: K. Maiurano
W. Wertz
S. Radon

OCT 26 1990

Alan F. Weston, Ph.D.
Manager, Analytical Services
Special Environmental Services
Occidental Chemical Corporation
360 Rainbow Boulevard South
P.O. Box 728
Niagara Falls, New York 14302-0728

Re: Resource Conservation and Recovery Act (RCRA)
EPA I.D. No.: NYD000824482
Corrective Action Program-Dioxin Investigation

Dear Dr. Weston:

The United States Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation (NYSDEC) have received Occidental's (OCC) letter of October 16, regarding the Radio Tower Area sampling of the Dioxin Investigation (DI) Program at the Main Plant.

Your letter indicates that of the five soil samples recently collected from the Radio Tower Area, the 0 to 6 inch depth sample from location 257 contains dioxin at a concentration of 3.7 ppb (6.6 ppb in the field duplicate). This sample was collected from OCC's eastern property line. Furthermore, OCC proposes the collection of four additional 0 to 6 inch depth soil samples from the adjacent City of Niagara Falls property as shown on Figure 1 of the letter.

The EPA and the NYSDEC hereby approve OCC's proposal for the collection of the four additional soil samples.

An additional soil sample (0 to 6 inch depth) should be collected for dioxin analysis along the east side of the alley on the City property, north of sample location 258. This additional sample location is shown on the attached Figure 1. Sampling at this location is necessary to determine whether or not dioxin contaminated soil was deposited in this area or the area has been impacted by wind dispersion of dioxin from other contaminated areas.

In addition, as discussed during the EPA/NYSDEC September 14 verbal approval for the collection of samples 253 through 257 and as referenced in the agencies October 4 letter to you, one of these samples was to be collected from the northeastern portion of Area III in order to identify any dioxin presence in that location. However, upon review of Figure 1, that sample has not been collected. Figure 1 identifies the location where the sample should be collected. Procedure 1 of the Dioxin Investigation Work Plan, of January 23, 1990, should be implemented for the collection of this sample.

For the sampling referenced in this letter, OCC must carry out the following:

1) Obtain the necessary approvals from the City of Niagara Falls;

2) Implement the appropriate sampling and analytical protocols specified in the Dioxin Investigation Work Plan; and

3) Coordinate sample collection with the NYSDEC on-site monitor to ensure agency field oversight.

If you have any questions or would like to discuss this matter further, please call Alan Straus of the EPA at (212) 264-5131, or William Wertz, Ph.D., of the NYSDEC at (518) 457-9255.

Sincerely yours,

Andrew Bellina, Chief
Hazardous Waste Facilities Branch
Air and Waste Management Division
United States Environmental Protection Agency

Paul R. Counterman, P.E., Director
Bureau of Hazardous Waste Facility Permitting
Division of Hazardous Substances Regulation
New York State Department of Environmental Conservation

Attachment

cc: P. Buechi, NYSDEC-Region 9 w/attach.
S. Saroff, NYSDOL w/attach.

bcc: P. Counterman, NYSDEC-Albany w/attach.
W. Wertz, " w/attach.
S. Kaminski, " w/attach.
K. Maiurano, " w/attach.
J. Hall, Alliance Technologies w/attach.
A. Straus, 2AWM-HWF w/attach.
L. Livingston, 2OPM-PA w/attach.

Attachment

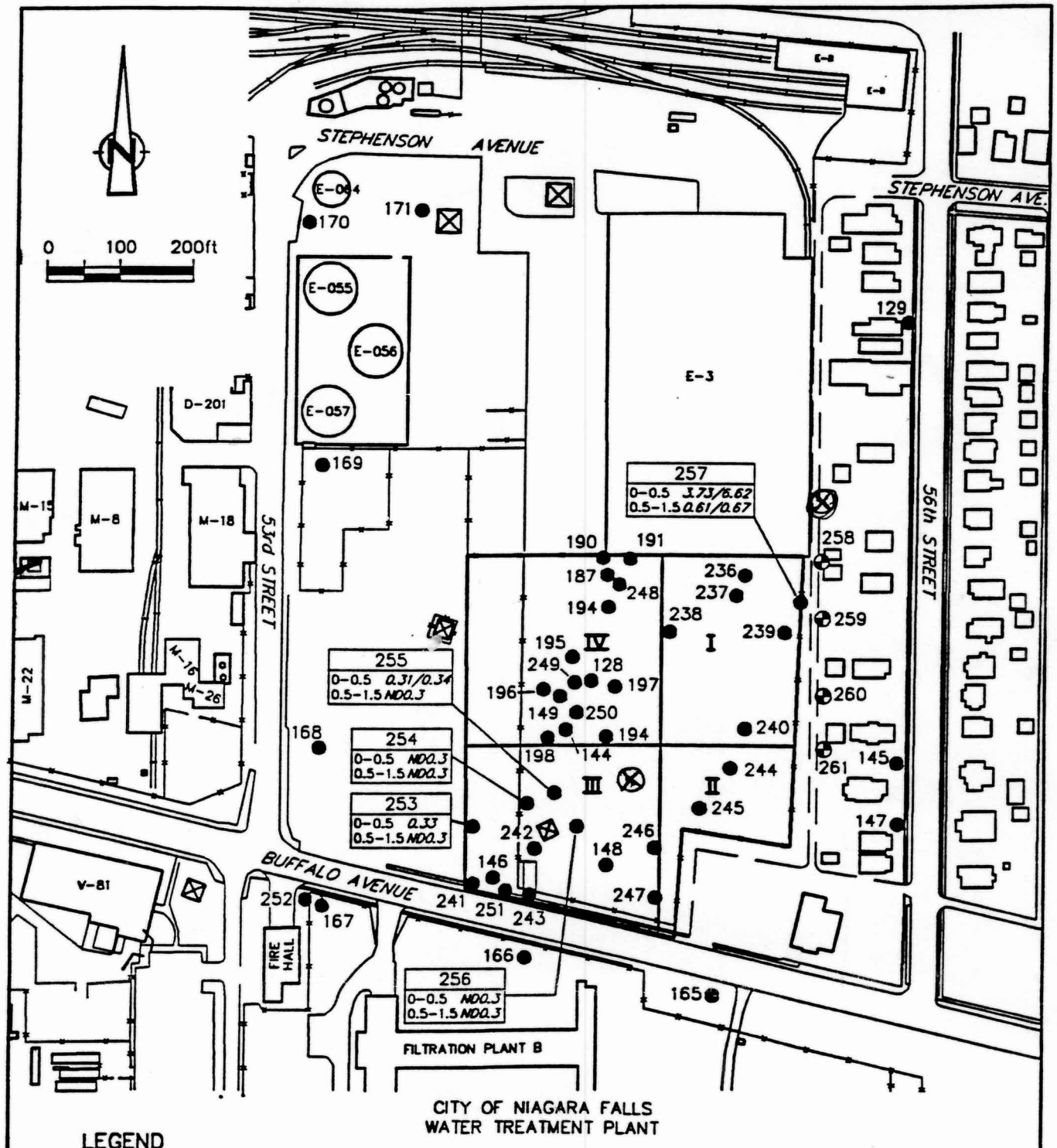

figure 1

ADDITIONAL SAMPLING LOCATIONS
EAST OF ALLEY
RADIO TOWER PROPERTY
DIOXIN INVESTIGATION
OCC Niagara Plant

2583-02-3/09/90-P-0 (P-74)

JAN 25 1990

Alan F. Weston, Ph.D.
Manager, Analytical Services
Special Environmental Programs
Occidental Chemical Corporation
360 Rainbow Boulevard South
Box 728
Niagara Falls, New York 14302

Re: Resource Conservation and Recovery Act (RCRA)
Corrective Action Program
EPA I.D. No.: NYD000824482
Dioxin Investigation
Sewer Evaluation

Dear Dr. Weston:

The United States Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation (NYSDEC) have reviewed Occidental's December 11, 1989, January 17, 1990, and January 23, 1990 responses and revised work plan pages submitted in response to EPA/NYSDEC's comments on the documents entitled "Work Plan - Dioxin Investigation, Buffalo Avenue Plant" and "Work Plan - Sewer Evaluation, Buffalo Avenue Plant," both dated August 30, 1989.

The EPA and the NYSDEC hereby approve the Dioxin Investigation and Sewer Evaluation Work Plans, effectively dated January 23, 1990.

As indicated in the implementation schedules, following completion of the first phase of the Source Investigation Program, the Sewer Evaluation will commence, followed by the Dioxin Investigation.

The NYSDEC on-site monitors will provide field oversight of the Sewer Evaluation Program and collect split samples from Occidental. Please provide the on-site monitors with at least seven days advance notice prior to commencing the Sewer Evaluation's field activities.

Regarding the Dioxin Investigation, an EPA contractor will collect split samples from Occidental at a limited number of sampling locations. These locations are identified on the attached table. The NYSDEC will provide field oversight for the remainder of the Dioxin Investigation. As discussed, the EPA or EPA contractor will coordinate with Occidental to arrange for the most efficient collection of the split samples. Please provide the EPA/NYSDEC with at least 30 days advance notice prior to commencing the Dioxin Investigation's field activities.

If you have any questions regarding this letter, please contact Alan Straus of the EPA at (212) 264-5131 or William Wertz, Ph.D. of the NYSDEC at (518) 457-9255.

Sincerely yours,

Andrew Bellina, Chief
Hazardous Waste Facilities Branch
Air and Waste Management Division
United States Environmental Protection Agency
Region II

Paul R. Counterman, P.E., Director
Bureau of Hazardous Waste Facility Management
Division of Hazardous Substances Regulation
New York State Department of
Environmental Conservation

Attachment

cc: K. Maiurano, NYSDEC w/attachment
R. Osar, NYSDOL "
S. Saroff, NYSDOL "
P. Buechi, NYSDEC-Region 9 "

bcc: P. Counterman, NYSDEC-Albany w/attachment
W. Wertz, NYSDEC-Albany "
S. Kaminski, NYSDEC-Albany "
T. Knickerbocker, URS "
A. Angers, Alliance "
A. Straus, 2AWM-HWF "
L. Lazarus, 2ES-MM "
L. Livingston, 2PM-PA "

TABLE 7-1

SPLIT SAMPLING OUTLINE

Investigation Area	Sample Location	Media	Sample Depth	Analytes
U-Area	315	Soil	0 - 6 inch	PCDDs and PCDFs*
E-4 Vector	318	Soil	0 - 6 inch	PCDDs and PCDFs
Rail Road Area	321	Soil	0 - 6 inch	PCDDs and PCDFs
D-7 Area	D7-1	Soil	0 - 3 foot	PCDDs and PCDFs
	FG-4	Soil	3 - 6 foot	PCDDs and PCDFs
	FG-4	Soil	0 - 3 foot	TCL organics
	D-3	Soil	3 - 6 foot	PCDDs and PCDFs
D-Area Sewers	SED-8 (MG-320)	Sediment	N/A	PCDDs and PCDFs
Iroquois St. Sewer	MG-170A	Sediment	N/A	PCDDs and PCDFs
47th St. Sewer	No. of Conrail Tracks	Sediment	N/A	PCDDs and PCDFs

TABLE 7-1
Cont'd.

Investigation Area	Sample Location	Media	Sample Depth	Analyte
Utility Bedding				
Sanitary Sewers	BED-2	Bedding/Soil	N/A	PCDDs and PCDFs
D-Area Groundwater	OW-356	Groundwater	N/A	PCDDs, PCDFs, and Site Specific Indicators
	OW-357	Groundwater	N/A	PCDDs, PCDFs, and Site Specific Indicators
Radio Tower	-- 239	Soil	0-6 inch	PCDDs and PCDFs
Property	-- 190	Soil	0-6 inch	PCDDs and PCDFs
Equipment Rinsate Blank	one blank per day per equipment type cleaned	Rinsewater	N/A	TCL Organics and Site Specific Indicators
Equipment Rinsate Blank	one blank from D area groundwater sampling one blank per day per equipment type cleaned	Solvent (trichloroethene)	N/A	PCDDs and PCDFs
Trip Blank	D-7 Area Groundwater Sampling	Water	N/A	VOAs from TCL

TABLE 7-1
Footnotes

* PCDD and PCDF Analytes

(Polychlorinated dibenzo-p-dioxins)

2,3,7,8-TCDD
1,2,3,7,8-PeCDD
1,2,3,4,7,8-HxCDD
1,2,3,7,8,9-HxCDD
1,2,3,6,7,8-HxCDD
1,2,3,4,6,7,8-HpCDD
OctaCDD
Total TCDD
Total PeCDD
Total HxCDD
Total HpCDD

(Polychlorinated dibenzofurans)

2,3,7,8-TCDF
1,2,3,7,8-PeCDF
2,3,4,7,8-PeCDF
1,2,3,4,7,8-HxCDF
1,2,3,7,8,9-HxCDF
1,2,3,6,7,8-HxCDF
2,3,4,6,7,8-HxCDF
1,2,3,4,6,7,8-HpCDF
1,2,3,4,7,8,9-HpCDF
OctaCDF
Total TCDF
Total PeCDF
Total HxCDF
Total HpCDF

** Site Specific Indicator Compounds

Organic Parameters

Benzene
Toluene
2-Chlorotoluene
4-Chlorotoluene
2,5/2,4-Dichlorotoluene
3,4-Dichlorotoluene
2,6-Dichlorotoluene
Trichlorotoluene
Chlorobenzene
1,2-Dichlorobenzene
1,4-Dichlorobenzene
1,2,3-Trichlorobenzene
1,2,4-Trichlorobenzene
1,2,3,4-Tetrachlorobenzene
1,2,4,5-Tetrachlorobenzene
Hexachlorobenzene
Trichloroethylene
Tetrachloroethylene
2-Chlorobenzotrifluoride
4-Chlorobenzotrifluoride
2,4-Dichlorobenzotrifluoride
3,4-Dichlorobenzotrifluoride
Hexachlorobutadiene
Hexachlorocyclopentadiene
Octachlorocyclopentene
Perchloropentacyclodecane (Mirex)
2,4,5-Trichlorophenol
a-Hexachlorocyclohexane
b-Hexachlorocyclohexane
g-Hexachlorocyclohexane
d-Hexachlorocyclohexane
Benzoic Acid
2-Chlorobenzoic Acid
3-Chlorobenzoic Acid
4-Chlorobenzoic Acid
Chlorobenzoic Acids, Totals
Chlorendic Acid

Inorganic and Non-Specific Parameters

pH
Conductivity

*** The number of rinsate blanks will be dependent upon the work schedule.

**** Trip blank for TCL VOAs.

15 NOV 1989

Alan F. Weston, Ph.D.
Manager, Analytical Services
Special Environmental Programs
Occidental Chemical Corporation
360 Rainbow Boulevard - South
P.O. Box 728
Niagara Falls, New York 14302

Re: Resource Conservation and Recovery Act (RCRA)
Corrective Action Program
Dioxin Investigation, Sewer Evaluation
EPA I.D. No. NYD000824482

Dear Dr. Weston:

The United States Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation (NYSDEC) have reviewed Occidental's response to EPA/NYSDEC comments and the revised draft Dioxin Investigation and Sewer Evaluation work plans submitted August 30, 1989.

Prior to EPA/NYSDEC approval of the work plans, several revisions must be made. Please find below EPA/NYSDEC comments.

Dioxin Investigation Work Plan Comments

1. The Centers for Disease Control (CDC) established a level of concern of 1 part per billion (ppb) of 2,3,7,8-TCDD in residential soils. This 1 ppb level of concern is being used at the Buffalo Avenue Plant as a criteria to characterize the extent of 2,3,7,8-TCDD contamination. If 2,3,7,8-TCDD is detected at or above the CDC 1 ppb level of concern at any location, further sampling and analysis must be carried out in order to fully characterize the extent of the release. The dioxin work plan specifies the condition for further sampling and/or analysis in the following manner: "If dioxin is present in excess of 1 ppb...." This language must be changed to: if dioxin is present at or above 1 ppb.

2. Occidental's condition requiring available storage space in order to manage the remedial waste according to the specified SDCP protocols is unacceptable. Implementation of the investigation cannot be held hostage to temporary storage space availability. If Occidental foresees a

shortage of storage space at the Buffalo Avenue Plant, Occidental must pursue additional storage space prior to generation of such excess waste. (This comment also applies to the Sewer Evaluation.)

3. Regarding the Waste Storage and Disposal section on page 24 of the work plan, the EPA/NYSDEC do not anticipate allowing Occidental to dispose of incineration residues at the S-Area Landfill.

4. The proposed sampling locations in subareas III and IV of the Radio Tower Area appear sufficient to further define the extent of dioxin releases in these areas. However, as discussed during our last teleconference and during the SDCP Technical Progress meeting of September 22, 1989, sampling is necessary in the northwest portion of subarea IV. This additional sampling is needed to complete the screening for dioxin presence throughout the Radio Tower Area. Four samples will be sufficient for dioxin screening in this northwestern area. Sampling procedure No. 1 should be followed in carrying out this sampling.

5. All proposed sampling locations in Figure 5 - Radio Tower Area must be identified by a number.

6. Under the SDCP program the NYSDEC/New York State Department of Health (NYSDOH) analyzed split samples of surface soils from the F and N Areas of the Buffalo Avenue Plant. These results were provided to you during the SDCP Technical Progress meeting of September 22, 1989. As you are aware, the analytical results of the split samples identified the presence of several dioxin and furan compounds.

   Although the EPA National Dioxin Study screening sampling concentrated on 2,3,7,8-TCDD, the intent of the study does not preclude follow-up sampling and analysis for other dioxin isomers and furans.

   In light of the NYSDEC/NYSDOH analytical results, it is likely that the compounds detected in the F and N Areas are present in the Dioxin Investigation target areas. In order to fully characterize the dioxin/furan presence at the plant, the EPA/NYSDEC recommends that Occidental analyze for the parameters listed below in this sampling round as well as in any future sampling rounds which may be required for deeper samples based on positive results from this round. The EPA split samples will be analyzed for the parameters listed below and the necessity for any further investigation or corrective measures will be based on an evaluation of the presence/concentration of these dioxin and furan compounds:

   2,3,7,8-TETRACHLORODIBENZODIOXIN